



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,240	11/18/2003	Mike MacArthur	ROB3108.03A	6893
7590	07/13/2005		EXAMINER	
James M. Ritchey O'BANION & RITCHHEY Wells Fargo Center, Suite 1550 400 Capitol Mall Sacramento, CA 95814			ADDISU, SARA	
		ART UNIT	PAPER NUMBER	
		3722		
DATE MAILED: 07/13/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/717,240	MACARTHUR, MIKE	
Examiner	<b>Art Unit</b>		
Sara Addisu	3722		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 4/29/05.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-14 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-14 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 18 November 2003 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_.  
\_\_\_\_\_

**DETAILED ACTION**

***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "off-set" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specification of Instant application, Paragraph 37, as pointed out by Applicant's arguments still does not clarify the claimed subject matter. It is not clear what line of reference the Applicant is using to measure the "about 1 – 10 degrees" as claimed in Claim 14.

#### ***Response to Amendment***

Applicant's arguments, see Page 2 and 3, filed 4/29/05, with respect to the rejection(s) of claim(s) 1, 4 and 9 under 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art reference(s).

#### ***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6 and 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Risen (U.S. Patent No. 6,652,203).

Risen teaches a rotary cutting tool (10) having a shank (16) that extends to a cutting region [includes first portion 18 at the tip (14) and second portion (20) disposed between (18) and shank (16)] (see figure 1 and Col. 3, liens 14-27). Risen also teaches cutting flutes (22: i.e. with cutting edge formed along an outer border of the flute) formed within the cutting region beginning at the cutting tip and terminates at a distal location (portion 18) towards the shank (Col. 3, lines 1-13). Furthermore, Risen teaches flutes (22) having variable helix angles (helical pitch) where a first helical-pitch ( $\alpha_1$ ) that is proximate the cutting tip (14) and is about 38 degrees, decreases over the distance D1 to a second helical-pitch ( $\alpha_2$ ) of 35 degrees, proximate the terminating distal location (see figure 1 and Col. 3, line 57- Col. 4, line 20). First helical-pitch ( $\alpha_1$ ) of about 38 degrees taught by Risen falls in the range of "about 10- 60 degrees" and "about 30-40 degrees", claimed in claims 2, 3, 5 & 6. Second helical-pitch ( $\alpha_2$ ) of 35 degrees taught by Risen falls in the range of "about 60- 10 degrees" and "about 40-30 degrees", claimed in claims 2, 3, 5 & 6.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 7-9, 12 and 13, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Paige (U.S. Patent No. 4,810,136), in view of Risen (U.S. Patent No. 6,652,203).

Paige teaches a rotary cutter having a cutting region that terminates into a cutting tip and flutes with reversed helical pitch (see Figures 1 & 2 and Abstract). Regarding Claim 14, Paige teaches in Figure 3, pair of flutes that are offset from another pair of flutes that are across from it.

However, Paige fails to teach each flute having variable helical pitch.

Risen teaches a rotary cutting tool (10) having a shank (16) that extends to a cutting, and flutes with variable helical pitch as set forth in the above rejection.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Paige's tool such that it has variable helical pitch, as taught by Risen for the purpose of having a tool that is calibrated to mutually optimize penetration rate and chip removal ('203, Col. 2, lines 52-55).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 3722

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sara Addisu  
(571)272-6082



BOYER D. ASHLEY  
PRIMARY EXAMINER